



Source Water Assessment Program (SWAP) Report For Brook Village Condominium

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource
Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	Brook Village Condominium
PWS Address	52 Swanson Road
City/Town	Boxboro, Massachusetts
PWS ID Number	2037007
Local Contact	Warner Guild
Phone Number	(978)486-0473

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	2037007-01G	210	520	Moderate
Well #2	2037007-02G	210	520	Moderate
Well #3	2037007-03G	263	673	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

Brook Village Condominium gets its water supply from three bedrock wells ranging in depth from 160 to 190 feet. The wells are located south of the condominium buildings, between the buildings and Interstate 495 (I-495). Wells #1 and #2 are known as Swanson North and South, respectively, and Well #3 is known as Spencer 1. Wells #1 and #2 each have a Zone I of 210 feet and an Interim Wellhead Protection Area (IWPA) of 520 feet and Well #3 has a Zone I of 263 feet and an IWPA of 673 Feet. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

Zone I and IWPA. The wells serving the facility are treated with a softening agent. For current information on monitoring results and treatment and a copy of the most recent Consumer Confidence Report, please contact the Public Water System contact person listed above in Table 1.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **Transportation corridor; and**
3. **Wastewater treatment plant.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is** – Currently, the wells do not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone Is contain buildings, roads, the wastewater treatment plant, and parking areas. The public water supplier does not own and/or control all land encompassed by the Zone I. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ If the facility intends to continue utilizing the structures, roads, and parking in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

2. **Transportation corridor** - Interstate 495 is located within the Zone I and IWPA. Major roads are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.

Recommendation:

- ✓ Contact local fire department to ensure that the IWPA is included in Emergency Response Planning
- ✓ Do not use pesticides or road salt within the Zone I.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking lot, driveways & access roads	Well # 1	Well #1	Moderate	Limit road salt usage and provide drainage away from wells
Transportation corridor	All wells	All wells	Moderate	Route 495
Wastewater treatment plant	Well #3	All wells	Moderate	Variance granted
Septic system	No	All wells	Moderate	See septic systems brochure in the attachments
Utility substation transformer	No	All wells	Low	Transformers are newer and do not contain PCBs.

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

3. **Wastewater Treatment Plant** – A wastewater treatment system and discharge to groundwater is located at the site. The wastewater treatment plant lies within the Zone I of one of the on-site wells. Due to the location of the wastewater treatment plant, the Drinking Water Program required Brook Village Condominiums to apply for a variance from Zone I requirements, and it was granted with provisions in a letter dated December 2, 1999.

Recommendation:

- ✓ Maintain increased vigilance in Best Management Practices for the wastewater treatment plant due to its proximity to Well #3.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Brook Village Condominiums should review and adopt the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include groundskeepers, and certified operator
- ✓ Post drinking water protection area signs at key visibility locations

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.

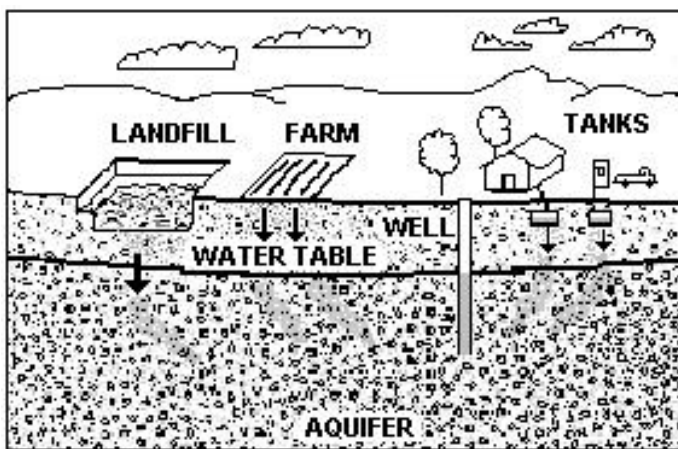


Figure 1: Example of how a well could become contaminated by different land uses and activities.

Planning:

- ✓ Work with local officials in Boxboro to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under

For More Information:

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 5030** for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

the 2001 "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet (Please note: each program year the Department posts a new Request for Response for the Grant program (RFR)).

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Pesticide Use Factsheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, the town library and the local media.